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# Quarry crew develops a better oil filtration system

By Leslie Dyson

FABRICATOR/WELDER CASEY JONES, Cox Quarry Manager John Trembley and the Operating Engineer crew working at Mainland Sand and Gravel's quarry on Sumas Mountain in Abbotsford are excited about a kidney loop filtration system that they've designed and constructed.

"We were throwing everyone's ideas in," said Jones. "Everyone shared in the moment."

Heavy duty mechanic Kevin Grant and equipment operator Jamie Hamilton explained that before the dual-action lubricant filtration system was available, the only alternative was to flush the old oil out, but this was messy, costly and wasteful.

The old method also required the loss of some of the new oil during the flushing process, explained Hamilton.

"Costs are down now because we're not having to change the oil and just throw it away," said Grant, and because the new system is so effective, there are longer intervals between servicing.

The new and relatively quiet system, designed by Trembley and assembled by Jones, uses a 10-micron absolute filter for the differential systems and a 5-micron filter for the hydraulic systems. But what makes it unique is

the magnetic scrubbers on the front, said Trembley.

They've discovered that moving the oil through the system and past the extremely powerful rare earth magnets is magnetizing other non-ferrous contaminants like brass, lead and silica.

The two systems are set on colour-coded carts and each one features a pump, regulator, filter, magnet and its own toolbox.

The filtering process takes about an hour and a half for a 775-ton rock truck.

Lab samples show that once the process is complete, the oil is actually cleaner than when it was originally purchased. Contaminants get into the oil because of all the particles and dust picked up during the transfers on the way from the refinery, he said. "We've achieved cleaner than clean oil and we expect it will extend component life big time." Trembley said he estimates that the operation saves about \$300 every time a rock truck comes in for servicing and that components are lasting twice as long.

The two carts currently service the quarry's rolling stock. Work is now under way to construct two more units that are more portable and that can be used on the on-site crushers and at other pits.

*This kidney loop filtration system, using filters and rare earth magnets, was assembled by welder/fabricator Casey Jones, a member of Operating Engineers Local 115, and designed by Cox Quarry Manager John Trembley. It saves on oil costs, extends the life of the quarry equipment and is better for the environment. The first sample showed that the oil that's produced once it's run through the system has fewer impurities than the originally purchased lubricants in some cases.*



*Welder/fabricator Casey Jones, with inspiration from several crew members, built this 1500 lb. deluxe barbecue, using a liner out of crusher cone, screen media for the rack, an air compressor pulley and a chain off a come-along to adjust the rack, a crank shaft dampener off a 992 caterpillar loader to control the draft, a bead ring from a 740 caterpillar articulated truck for the base, a pipe for the bean pot arm and various other recycled parts to complete the project. They're still working on the rotisserie and smoker components. It's only drawback is that it's not very portable.*



Leslie Dyson photos